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ABSTRACT

This module reviews the essential steps in basic mathematics as they are used in cooperative occupational education. Special needs students using the module should be able to complete five applications of basic mathematics in cooperative occupational education with 90 percent accuracy. Designed for individualized instruction, the module consists of a teacher guide, a student guide, a packet of module tests, a 35mm slide presentation, and an audiocassette. The instructor guide contains an introduction, performance objectives, a script for a slide presentation, an answer key for the module tests, and suggested instructional methods. The student guide contains an introduction, performance objectives, procedures for using the module, information sheets, and worksheets. Topics covered include the following: making change, cash register reports, taking inventory, filling orders, and figuring sale prices. (KC)

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INSTRUCTOR'S GUIDE

PROGRAM: Cooperative Occupational Education **UNIT TITLE:** Basic Mathematics

MODULE TITLE: Application of Basic Math to Cooperative Occupational Education **MODULE NO.** SN-83-380

INTRODUCTION:

A presentation for students illustrating the use of basic math in cooperative occupational education.

PERFORMANCE OBJECTIVES:

Upon completion of this module, students will be able to complete the five applications of basic math to cooperative occupational education with 90 percent accuracy.

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Learning Groups Designed For:

_____ **Adult**
__X__ **Special Needs**
_____ **Secondary**
_____ **Post Secondary**

Written By:

J. Wilson 1983

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THE MEDIA CENTER State Fair Community College
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Sedalia MO 65301
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Specializing in the development of Mediated Instructional Materials

TEACHING/LEARNING RESOURCES:

X Student Packet	___ Videocassette
X Instructor's Guide, Key, and Script	___ Film Loop
X 35 mm Slide Presentation	X Audiocassette
___ Filmstrip	

RESOURCE MATERIALS: The resource materials for this module include the slide-tape presentation of the five applications of math to cooperative occupational education; a set of worksheets to further explain and to permit direct student involvement in the learning process; and a set of tests for diagnosis and evaluation of student progress.

INSTRUCTIONAL METHODS SUGGESTED:

These materials can be used as a group activity or as individualized instruction. This would apply to both the slide-tape presentation and the student worksheets. Parallel test forms are provided for evaluation of skills presented.

MODULE TEST

FORM A

MAKING CHANGE

Directions: Place a tally mark under each column heading of a coin or currency if it is to be used in the change.

Amount Of Purchase	Amount Given To Clerk	Use The Fewest Number of Coins and Currency To Make Change							
		Pennies	Nickels	Dimes	Quarters	Half Dollars	$1	$5	$10
$1.09	$ 5.00								
$7.18	$10.00								
$1.10	$ 5.00								
$2.63	$ 5.00								
$4.42	$ 5.00								

MODULE TEST

FORM B

MAKING CHANGE

Directions: Place a tally mark under each column heading of a coin or currency if it is to be used in the change.

Amount Of Purchase	Amount Given To Clerk	Use The Fewest Number of Coins and Currency To Make Change							
		Pennies	Nickels	Dimes	Quarters	Half Dollars	$1	$5	$10
$1.76	$ 5.00								
$2.42	$10.00								
$9.83	$20.00								
$1.86	$20.00								
$3.37	$20.00								

MODULE TEST
FORM A

CASH REGISTER REPORT

CASH REGISTER REPORT

Cashier_____ Reg. No._____ _____19____

Quantity	Denomination	Amount
	Coins	
	Currency	
	Checks	
	Total Cash (End of Day)	
	Add (+) Cash Paid Out	
	Total Cash Received	
	Less (-) Beginning Change Fund	
	Total Cash From Sales	
	Cash Proved	
	Cash Short	
	Cash Over	

_____
Prepared By

Register Tape

At the end of the day as a cashier for Western Book Store, your cash register drawer contains the following: coins - $35.00; currency - $75.00; checks - $20.00. The Cash Paid Out was $10.00. The Beginning Change Fund is $20.00. The Register Tape indicated sales to be $120.00.

Directions: Prepare a CASH REGISTER REPORT in the above form from this information.

MODULE TEST

FORM B

CASH REGISTER REPORT

CASH REGISTER REPORT

Cashier_____Reg. No._____ _____19____

Quantity	Denomination	Amount	
	Coins		
	Currency		
	Checks		
	Total Cash (End of Day)		
	Add (+) Cash Paid Out		
	Total Cash Received		
	Less (-) Beginning Change Fund		
	Total Cash From Sales		
	Cash Proved		Register Tape
_____ Prepared By	Cash Short		
	Cash Over		

At the end of the day as a cashier for Western Book Store, your cash register drawer contains the following: coins - $45.00; currency - $55.00; checks - $25.00. The Cash Paid Out was $10.00. The Beginning Change Fund is $20.00. The Register Tape indicated sales to be $110.00.

Directions: Prepare a CASH REGISTER REPORT in the above form from this information.

MODULE TEST

FORM A

TAKING INVENTORY

INVENTORY SHEET

Date Clerk Page

Stock No.	Item	Unit	Quantity	Unit Price	Total Value
1120	Racquetball Racket	Each		$22.00	
1121	Racquetball	Each		3.25	
1201	Tennis Balls	Can		4.00	

As the stock person counted the inventory, he found 2 racquetball rackets, 6 racketballs, and 4 cans of tennis balls.

Directions: Record the number of each item in stock. Figure the Total Value of each item and place that value in the last column.

MODULE TEST

FORM B

TAKING INVENTORY

INVENTORY SHEET

Date Clerk Page

Stock No.	Item	Unit	Quantity	Unit Price	Total Value
1120	Racquetball Racket	Each		$22.00	
1121	Racquetball	Each		3.25	
1201	Tennis Balls	Can		4.00	

As the stock person counted the inventory, he found 4 racquetball rackets, 6 racketballs, and 9 cans of tennis balls.

Directions: Record the number of each item in stock. Figure the Total Value of each item and place that value in the last column.

MODULE TEST

FORM A

FILLING ORDERS

FROM: Brown's Manufacturing Co.
228 Ridge Rd.
Denver, CO 80203

SHIPPING ORDER

CUSTOMER'S ORDER NO.	OUR ORDER NO.	SHIPPED VIA	DATE
245	7982	Truck	6/24/8-

SOLD TO: John's Auto Parts
250 27th St.
Denver, CO 80206

SHIP TO: Same

Quantity Shipped	Quantity B.O.	Unit	Stock No.	Quantity Ordered	Description
		Each	9006	50	Shock Absorbers
		Each	9084	60	Gas Caps
		Each	9077	95	Spark Plugs

As a clerk of Brown's Manufacturing Co., you check the above merchandise and find you have in stock 40 shock absorbers, 60 gas caps, and 70 spark plugs.

Directions: Record the above information to reflect the shipping of those items in the first two columns of the shipping order.

MODULE TEST

FORM B

FILLING ORDERS

FROM: Brown's Manufacturing Co.
228 Ridge Rd.
Denver, CO 80203

SHIPPING ORDER

CUSTOMER'S ORDER NO.	OUR ORDER NO.	SHIPPED VIA	DATE
245	7982	Truck	6/24/8-

SOLD TO: John's Auto Parts
250 27th St.
Denver, CO 80206

SHIP TO: Same

Quantity		Unit	Stock No.	Quantity Ordered	Description
Shipped	B.O.				
		Each	9006	50	Shock Absorbers
		Each	9084	60	Gas Caps
		Each	9077	95	Spark Plugs

As a clerk of Brown's Manufacturing Co., you check the above merchandise and find you have in stock 50 shock absorbers, 50 gas caps, and 90 spark plugs.

Directions: Record the above information to reflect the shipping of these items in the first two columns of the shipping order.

MODULE TEST

FORM A

FIGURING SALE PRICE

Price	Percent in Reduction	Decimal Value	Reduction in Price	Sale Price
$240.00	25%	.25		
$160.00	25%	.25		
$ 90.00	25%	.25		

MODULE TEST

FORM B

FIGURING SALE PRICE

Price	Percent in Reduction	Decimal Value	Reduction in Price	Sale Price
$ 32.00	25%	.25		
$640.00	25%	.25		
$ 96.00	25%	.25		

KEY

WORKSHEET 1

MAKING CHANGE

	Amount Of Purchase	Amount Given To Clerk	Use The Fewest Number of Coins and Currency to Make Change							
			Pennies	Nickels	Dimes	Quarters	Half Dollars	$1	$5	$10
1	$2.35	$10.00		1	1	11		11	1	
2	3.30	5.00			11		1	1		
3	15.20	20.00		1		1	1	1111		
4	1.25	2.00				1	1			
5	1.98	5.00	11					111		
6	3.82	5.00	111	1	1			1		
7	1.27	5.00	111		11		1	111		
8	2.35	5.00		1	1		1	11		
9	4.75	5.00				1				
10	15.18	20.00	11	1		1	1	1111		

WORKSHEET 2

MAKING CHANGE

	Amount Of Purchase	Amount Given To Clerk	Use The Fewest Number of Coins and Currency to Make Change							
			Pennies	Nickels	Dimes	Quarters	Half Dollars	$1	$5	$10
1	$6.42	$10.00	111	1			1	111		
2	9.09	10.00	1	1	1	1	1			
3	.28	10.00	11		11		1	1111	1	
4	12.59	20.00	1	1	1	1		11	1	
5	7.82	10.02			11			11		
6	5.52	10.02					1	1111		
7	7.48	10.00	11				1	11		
8	7.12	10.00	111		1	1	1	11		
9	4.77	5.00	111		11					
10	19.21	20.00	1111			1	1			

KEY

WORKSHEET 3

CASH REGISTER REPORT

CASH REGISTER REPORT

Cashier J. Browne Reg. No. 2 2/26 ~ 19--

Quantity	Denomination	Amount	
	*Coins	$200.00	
	*Currency	350.00	
	Checks	90.00	
	Total Cash (End of Day)	$640.00	
	Add (+) Cash Paid Out	10.00	
	Total Cash Received	$650.00	
	Less (-) Beginning Change Fund	30.00	
	Total Cash From Sales	$620.00	$620.00

	Cash Proved	X
Joan Browne	Cash Short	
Prepared By	Cash Over	

Total Cash According To Register Tape

*In a cash register report, coins and currency would be itemized separately.

KEY

WORKSHEET 4

CASH REGISTER REPORT

CASH REGISTER REPORT

Cashier J. Smith Reg. No. 3 4/13 19--

Quantity	Denomination	Amount	
	*Coins	$250.35	
	*Currency	475.25	
	Checks	49.50	
	Total Cash (End of Day)	$775.10	
	Add (+) Cash Paid Out	20.00	
	Total Cash Received	$795.10	
	Less (-) Beginning Change Fund	50.00	
	Total Cash From Sales	$745.10	$755.10

	Cash Proved	
John Smith	Cash Short	$ 10.00
Prepared By	Cash Over	

Total Cash According To Register Tape

*In a cash register report, coins and currency would be itemized separately.

KEY

WORKSHEET 5

TAKING INVENTORY

INVENTORY SHEET

Date Clerk Page

Stock No.	Item	Unit	Quantity	Unit Price	Total Value
1149	Aspirin	Package	30	$ .90	$27.00
1150	Cough Syrup	Package	11	$1.50	$16.50
1151	Cold Remedy	Package	10	$2.50	$25.00
1152	Children's Aspirin	Package	40	$1.25	$50.00

KEY

WORKSHEET 6

TAKING INVENTORY

INVENTORY SHEET

Date Clerk Page

Stock No.	Item	Unit	Quantity	Unit Price	Total Value
1120	Racquetball Racket	Each	5	$22.00	$110.00
1121	Rackquetball	Can	8	$ 3.25	$ 26.00
1200	Tennis Rackets	Each	11	$35.00	$385.00
1201	Tennis Balls	Can	6	$ 4.00	$ 24.00

KEY

WORKSHEET 7

FILLING ORDERS

FROM: Brown's Manufacturing Co.
228 Ridge Rd.
Denver, CO 80203

SHIPPING ORDER

CUSTOMER'S ORDER NO.	OUR ORDER NO.	SHIPPED VIA	DATE
245	7982	Truck	6/24/8-

SOLD TO: John's Auto Parts
250 27th St.
Denver, CO 80206

SHIP TO: Same

Quantity Shipped	Quantity B.O.	Unit	Stock No.	Quantity Ordered	Description
50		Each	9006	50	Shock Absorbers
60		Each	9084	60	Gas Caps
50	45	Each	9077	95	Spark Plugs
5	5	Each	9065	10	Air Filters
35		Each	8777	35	Gas Filters

KEY

WORKSHEET 8

FILLING ORDERS

FROM: Brown's Manufacturing Co.
228 Ridge Rd.
Denver, CO 80203

SHIPPING ORDER

CUSTOMER'S ORDER NO.	OUR ORDER NO.	SHIPPED VIA	DATE
3001	7981	Truck	6/22/8-

SOLD TO: Whaler's Supply Co.
369 Mountain Avenue
Denver, CO 80206

SHIP TO: Same

Quantity Shipped	Quantity B.O.	Unit	Stock No.	Quantity Ordered	Description
42		Each	9006	42	Shock Absorbers
34	6	Each	9084	40	Gas Caps
50	5	Each	9077	55	Spark Plugs
40		Each	9065	40	Air Filters
100		Each	8777	100	Gas Filters

KEY

WORKSHEET 9

FIGURING SALE PRICE

Directions: Figure both reduction in price and sale price.

Price	Percent in Reduction	Decimal Value	Reduction in Price	Sale Price
$32.00	25%	.25	$8.00	$24.00
$45.00	25%	.25	$11.25	$33.75
$24.52	25%	.25	$ 6.13	$18.39
$35.00	25%	.25	$ 8.75	$26.25
$87.76	25%	.25	$21.94	$65.82

KEY

WORKSHEET 10

FIGURING SALE PRICE

Directions: Figure both reduction in price and sale price.

Price	Percent in Reduction	Decimal Value	Reduction in Price	Sale Price
$146.72	25%	.25	$36.68	$110.04
$157.00	25%	.25	$39.25	$117.75
$104.60	25%	.25	$26.15	$ 78.45
$ 98.00	25%	.25	$24.50	$ 73.50
$139.00	25%	.25	$34.75	$104.25

KEY

MODULE TEST

FORM A

MAKING CHANGE

Directions: Place a tally mark under each column heading of a coin or currency if it is to be used in the change.

Amount Of Purchase	Amount Given To Clerk	Use The Fewest Number of Coins and Currency To Make Change							
		Pennies	Nickels	Dimes	Quarters	Half Dollars	$1	$5	$10
$1.09	$ 5.00	|	|	|	|	|	|||		
$7.18	$10.00	||	|		|	|	||		
$1.10	$ 5.00		|	|	|	|	|||		
$2.63	$ 5.00	||		|	|		||		
$4.42	$ 5.00	|||	|			|			

KEY

MODULE TEST

FORM B

MAKING CHANGE

Directions: Place a tally mark under each column heading of a coin or currency if it is to be used in the change.

Amount Of Purchase	Amount Given To Clerk	Use The Fewest Number of Coins and Currency To Make Change							
		Pennies	Nickels	Dimes	Quarters	Half Dollars	$1	$5	$10
$1.76	$ 5.00	////		//			///		
$2.42	$10.00	///	/			/	//	/	
$9.83	$20.00	//	/	/					/
$1.86	$20.00	////		/			///	/	/
$3.37	$20.00	///		/		/	/	/	/

KEY

MODULE TEST
FOPM A

CASH REGISTER REPORT

CASH REGISTER REPORT

Cashier_____Reg. No._____ _____19____

Quantity	Denomination	Amount	
	Coins	$ 35.00	
	Currency	75.00	
	Checks	20.00	
	Total Cash (End of Day)	$130.00	
	Add (+) Cash Paid Out	10.00	
	Total Cash Received	$140.00	
	Less (-) Beginning Change Fund	20.00	
	Total Cash From Sales	$120.00	$120.00
	Cash Proved	X	Register Tape
	Cash Short		
Prepared By	Cash Over		

KEY

MODULE TEST

FORM B

CASH REGISTER REPORT

CASH REGISTER REPORT

Cashier_____ Reg. No._____ _____ 19____

Quantity	Denomination	Amount	
	Coins	$ 45.00	
	Currency	55.00	
	Checks	25.00	
	Total Cash (End of Day)	$125.00	
	Add (+) Cash Paid Out	10.00	
	Total Cash Received	$135.00	
	Less (-) Beginning Change Fund	20.00	
	Total Cash From Sales	$115.00	$110.00
	Cash Proved		Register Tape
	Cash Short		
Prepared By	Cash Over	$ 5.00	

KEY

MODULE TEST
FORM A

TAKING INVENTORY

INVENTORY SHEET

Date Clerk Page

Stock No.	Item	Unit	Quantity	Unit Price	Total Value
1120	Racquetball Racket	Each	2	$22.00	$44.00
1121	Racquetball	Each	6	$ 3.25	$19.50
1201	Tennis Balls	Can	4	$ 4.00	$16.00

KEY

MODULE TEST
FORM B

TAKING INVENTORY

INVENTORY SHEET

Date Clerk Page

Stock No.	Item	Unit	Quantity	Unit Price	Total Value
1120	Racquetball Racket	Each	4	$22.00	$88.00
1121	Racquetball	Each	6	$ 3.25	$19.50
1201	Tennis Balls	Can	9	$ 4.00	$36.00

KEY

MODULE TEST

FORM A

FILLING ORDERS

FROM: Brown's Manufacturing Co.
228 Ridge Rd.
Denver, CO 80203

SHIPPING ORDER

CUSTOMER'S ORDER NO.	OUR ORDER NO.	SHIPPED VIA	DATE
245	7982	Truck	6/24/8-

SOLD TO: John's Auto Parts
250 27th St.
Denver, CO 80206

SHIP TO: Same

Quantity Shipped	Quantity B.O.	Unit	Stock No.	Quantity Ordered	Description
40	10	Each	9006	50	Shock Absorbers
60		Each	9084	60	Gas Caps
70	25	Each	9077	95	Spark Plugs

KEY

MODULE TEST

FORM B

FILLING ORDERS

FROM: Brown's Manufacturing Co.
228 Ridge Rd.
Denver, CO 80203

SHIPPING ORDER

CUSTOMER'S ORDER NO.	OUR ORDER NO.	SHIPPED VIA	DATE
245	7982	Truck	6/24/8-

SOLD TO: John's Auto Parts
250 27th St.
Denver, CO 80206

SHIP TO: Same

Quantity		Unit	Stock No.	Quantity Ordered	Description
Shipped	B.O.				
50		Each	9006	50	Shock Absorbers
50	10	Each	9084	60	Gas Caps
90	5	Each	9077	95	Spark Plugs

KEY

MODULE TEST

FORM A

FIGURING SALE PRICE

Price	Percent in Reduction	Decimal Value	Reduction in Price	Sale Price
$240.00	25%	.25	$60.00	$180.00
$160.00	25%	.25	$40.00	$120.00
$ 90.00	25%	.25	$22.50	$ 67.50

KEY

MODULE TEST

FORM B

FIGURING SALE PRICE

Price	Percent in Reduction	Decimal Value	Reduction in Price	Sale Price
$ 32.00	25%	.25	$ 8.00	$ 24.00
$640.00	25%	.25	$160.00	$480.00
$ 96.00	25%	.25	$ 24.00	$ 72.00

SN-83-380 APPLICATION OF BASIC MATH TO COOPERATIVE OCCUPATIONAL EDUCATION - Script

1. This is a presentation of The Media Center, State Fair Community College, Sedalia, Missouri.

2. SN-83-380, Application of Basic Math to Cooperative Occupational Education

3. After viewing this module and completing the related exercises, you should be able to perform these math procedures related to Cooperative Occupational Education.

   1) Give a customer correct change when the purchase is less than $20.00.

4. 2) Prove the accuracy of money in a cash drawer with the cash register sales total.

5. 3) Compute dollar value of inventory by taking a physical count.

6. 4) Complete a shipping order correctly for shipped goods and back-ordered goods, and

7. 5) Figure sale price on merchandise by using a percent of reduction procedure.

8. Cooperative Occupational Education includes a wide variety of jobs that require the application of math.

9. These applications range from all phases of money handling and pricing to shipping and controlling goods from the manufacturer to the consumer.

10. In this example, the cashier is expected to return to the customer the correct change for a purchase. The amount of money given to the cashier is more than the price of the product. The necessary skills in this example include the operation of a cash register and the ability to correctly make change.

11. The cashier must be able to give change accurately to a customer making a purchase. To do so, the cashier places the cash received for the purchase on the shelf of the cash register,

12. The cashier uses the fewest number of coins and bills to make change. The cashier repeats the price of the purchase out of the amount given by the customer. For example, the cashier would say, "That will be $2.35 out of $10.00."

13. Count forward from the price of the purchase and use the fewest number of coins and bills, counting the total of the money as it is removed from the cash register.

14. In this example, count out the change to the customer by repeating the purchase price of $2.35 and continue counting the change -- $2.40, $2.50, $2.75, $3.00, $4.00, $5.00, and $10.00 -- as each coin and bill is placed in the customer's hand.

15. The change of $7.65 plus the price of $2.35 equals the money given the cashier by the customer. The $10.00 bill is then placed in the cash register. Stop the tape and complete Worksheets 1 and 2, Making Change, which are in your Student Guide. Then restart the tape.

16. In this example, the cashier prepares a cash register report at the end of the day to show the accuracy of the work in handling money for sales of various merchandise or services.

17. The total cash in the drawer is counted and recorded on a cash summary report. The money is separated into coins, bills, and checks. The total cash is shown on the summary.

18. During the day, the cashier may refund money from the cash drawer for returned merchandise. A receipt for all refunds should be signed by the cashier. Total refunds are added to total cash in the register to find the total cash received from sales for the day.

19. The starting cash change is $50.00 with which the cashier begins the day is deducted from this total. The result is the true amount of cash from sales for the day.

20. The total cash from Sales is compared with the tape total of the cash register to check the accuracy of the cashier. In this example, a one dollar error is shown. An error totaling $1.00 has been made in giving back change to customers during the day. This is recorded on the CASH SHORT line. Stop the tape and complete Worksheets 3 and 4, Cash Register Report, then restart the tape.

21. In this example, a physical count of merchandise is necessary in business to check the number of items in stock in the store. This informs the business of the goods available for sale. Taking this count is called inventory, and as the count is taken, it is written down on the inventory sheet.

22. The clerk records on the inventory sheet the <u>stock number</u> and <u>item</u> before starting the actual physical count. The <u>unit</u> is shown as a single item or a container of several items.

23. Each different item listed on the inventory sheet is then counted and the number is recorded under quantity. Thirty boxes of aspirin were counted on the shelf and 11 bottles of cough syrup.

24. The unit price is then recorded and the Total Value of each item is obtained by multiplying. Thirty boxes of aspirin times $.90 = 27.00.

25. The same process is repeated for each item listed on the inventory sheet. The items on the shelf are counted, then the number or quantity is multiplied by the unit price to obtain Total Value. Stop the tape and complete Worksheets 5 and 6, Taking Inventory, then restart the tape.

26. In this example, auto parts from a warehouse are shipped to many retail outlets. This process is accomplished by a clerk using carefully prepared shipping orders.

27. To begin with, the shipping clerk refers to the "quantity ordered" column on the shipping order. In this example, forty-two shock absorbers have been ordered. The shipping clerk then removes from the shelf forty-two shock absorbers and records the amount under "quantity shipped."

28. In this example, the clerk received an order for forty gas caps; however, there are only thirty-four in inventory to ship. Since forty minus thirty-four is six, the order will be six gas caps short. To fill a partial order and inform the customer that the remainder has been backordered, the clerk records thirty-four under "quanity shipped" and six under "quantity backordered." The six gas caps will be ordered and shipped later.

29. To ship the order, the clerk attaches the packing slip, a copy of the shipping order, to the box containing the auto parts. The box is then shipped to the customer. Stop the tape and complete Worksheets 7 and 8, Filling Orders, then restart the tape.

30. In this example, a retail store has reduced the prices of their merchandise in order to increase overall sales. The clerk must use a percent to calculate the amount to charge the customer.

31. If the price of the merchandise is thirty-two dollars and the discount is twenty-five percent, what would be the amount charged to the customer?

32. To calculate the amount charged, notice that twenty-five percent can be expressed as the decimal point two five (.25). A discount of twenty-five percent is calculated by multiplying point two five times the original price which is thirty-two dollars.

33. When point two five is multiplied times thirty-two, the result is eight. Eight dollars is twenty-five percent or one-fourth of thirty-two dollars. Now subtract eight dollars from thirty-two dollars to find the amount to charge the customer.

34. When eight dollars is subtracted from thirty-two dollars, the result is twenty-four dollars. The customer will be charged twenty-four dollars for the merchandise. Stop the tape and complete Worksheets 9 and 10, Figuring Sale Price, then restart the tape.

35. This is a summary of the material covered in this module.

36. Employment in Cooperative Occupational Ecucation requires the application of math skills. A cashier must know how to give change to a customer when a purchase has been made.

37. A cashier should have the skills necessary to fill out a cash register report. A cash register report indicates the accuracy of the work for the day.

38. In order to calculate the dollar value of goods, a clerk must have the math skills necessary to count merchandise on the store shelves.

39. The clerk must be able to remove merchandise from the shelves, ship the merchandise to the customer, and record back order information.

40. Cooperative Occupational Education workers must also be able to calculate the sale price of goods to be sold.

41. This is the end of Module SN-83-380. If you have questions, review the material or see your instructor.

42. (Credits)

43. (Disclaimer)

44. (Rewind)

STUDENT GUIDE

PROGRAM: Cooperative Occupational Education **UNIT TITLE:** Basic Mathematics

MODULE TITLE: Application of Basic Math to Cooperative Occupational Education **MODULE NO.** SN-83-380

PERFORMANCE OBJECTIVES:

Upon completion of this module, you will be able to complete the five applications of basic math to Cooperative Occupational Education with 90 percent accuracy.

THE MEDIA CENTER State Fair Community College
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Specializing in the development of Mediated Instructional Materials

INTRODUCTION

A presentation for students of application of basic math to cooperative occupational education.

OBJECTIVES

Upon completion of this module, you will be able to perform five applications of basic math to cooperative occupational education.

RESOURCE MATERIALS

The resource materials of this module consist of a slide/tape presentation which explains the applications of basic math to cooperative occupational education; a set of worksheets to further explain the applications of basic math; practice examples to directly involve the student in the learning process; and a set of tests for diagnosis and evaluation of student progress.

PROCEDURES

1. Read the objectives and introduction.

2. Look at one example of each math application in your "Student Guide."

3. If you feel you can pass a test over each application with 90 percent or better accuracy, ask your instructor for the module pretest.

4. If you do not take the pretest, or do not pass it, read all of the procedures listed on this page. Then follow the instructions given.

5. Observe and listen to slide/tape presentation SN-83-380, "Application of Basic Math to Cooperative Occupational Education."

6. Complete the worksheets in this booklet as you progress through the slide/tape presentation. Be sure to get help from your instructor when you need it.

7. After you complete each worksheet, ask your instructor to test you over that application before progressing further.

8. When you have completed all your worksheets and the slide/tape presentation, ask your instructor for the module posttest.

9. When you pass the posttest with 90 percent accuracy, you have completed this module.

GENERAL INSTRUCTIONS

Each of the following five worksheets has an information sheet that repeats the information on the slide/tape presentation and gives an example. Review the instruction sheet and work the problems. Then ask your instructor to check your answers. If you have further questions, be sure to ask your instructor for help. You will need your own paper and pencil for this work.

When working practice problems, if you find that you have forgotten how to compute something (for example, how to multiply decimal numbers) see your instructor for help.

INFORMATION SHEET 1

MAKING CHANGE

The skill of being able to count by intervals, especially by 5, is assumed. If you cannot do this, see your instructor.

In making change for a purchase of goods or services, repeat the price of the purchase and count forward while taking money from the cash drawer. Use the fewest number of coins and bills (currency) as you can. Count from the price and add the amount of each coin or bill taken from the cash drawer. In the first example, the price of the item is $2.35. As you remove the first nickel, say to yourself $2.40; remove a dime and say $2.50. Remove 2 quarters and say $2.75 --- $3.00. (Always count the small coins first and count to a $0.50 or $1.00 interval.) In our example, continue counting with the currency; take out two $1.00 bills and say $4.00 --- $5.00. And finally, take out the final $5.00 bill and say $10.00.

When working the following problems, place a mark under the column if that coin or bill will be used in making change. See the example.

WORKSHEET 1

MAKING CHANGE

	Amount Of Purchase	Amount Given To Clerk	Use The Fewest Number of Coins and Currency to Make Change							
			Pennies	Nickels	Dimes	Quarters	Half Dollars	$1	$5	$10
1	$2.35	$10.00		1	1	11		11	1	
2	3.30	5.00								
3	15.20	20.00								
4	1.25	2.00								
5	1.98	5.00								
6	3.82	5.00								
7	1.27	5.00								
8	2.35	5.00								
9	4.75	5.00								
10	15.18	20.00								

WORKSHEET 2

MAKING CHANGE

	Amount Of Purchase	Amount Given To Clerk	Use The Fewest Number of Coins and Currency to Make Change							
			Pennies	Nickels	Dimes	Quarters	Half Dollars	$1	$5	$10
1	$6.42	$10.00								
2	9.09	10.00								
3	.28	10.00								
4	12.59	20.00								
5	7.82	10.02								
6	5.52	10.02								
7	7.48	10.00								
8	7.12	10.00								
9	4.77	5.00								
10	19.21	20.00								

INFORMATION SHEET 2

CASH REGISTER REPORT

The assumption is made that you can count money correctly to arrive at the total of cash in the cash register drawer. If incorrect, please see your instructor.

To fill out the CASH REGISTER REPORT, record coins, currency and checks in the Amount column. Add these three to obtain TOTAL CASH (END OF DAY). Cash Paid Out should then be recorded in the Amount column and another total figured. This would give the TOTAL CASH RECEIVED which represents the total of sales taken in by the business for that day on the one register. Next, record the Beginning Change Fund and subtract to obtain TOTAL CASH FROM SALES. This subtraction process is done because the beginning change fund does not represent any money sales for this day.

Next, record REGISTER TAPE TOTAL under the arrow. Compare the TOTAL CASH FROM SALES with the REGISTER TAPE total. If cash from sales in the cash register is more than the REGISTER TAPE, a CASH OVER condition exists. The extra cash should be recorded on the line CASH OVER. If cash from sales in the cash register is less than the REGISTER TAPE, a CASH SHORT condition exists and the amount short can be recorded on CASH SHORT. If the money in the cash register drawer is the same as the REGISTER TAPE, there is a CASH PROVED condition.

Now, you are ready to do the two problems.

WORKSHEET 3

CASH REGISTER REPORT

CASH REGISTER REPORT

Cashier_____Reg. No._____ _____19____

Quantity	Denomination	Amount
	*Coins	
	*Currency	
	Checks	
	Total Cash (End of Day)	
	Add (+) Cash Paid Out	
	Total Cash Received	
	Less (-) Beginning Change Fund	
	Total Cash From Sales	
	Cash Proved	
	Cash Short	
	Cash Over	

_____
Prepared By

Total Cash According To Register Tape

*In a cash register report, coins and currency would be itemized separately.

You work at the office of Eastern Book Store. At the end of the day, your cash register drawer contains the following; coins -- $200.00; currency -- $350.00; checks --. $90.00. The cash paid out was $10.00. The beginning change fund was $30,00.

Directions: Prepare a CASH REGISTER REPORT for register no, 2 for Joan Browne on February 26, 19--. The Register Tape showed a total of $620.00.

WORKSHEET 4

CASH REGISTER REPORT

CASH REGISTER REPORT

Cashier_____ Reg. No._____ _____19____

Quantity	Denomination	Amount
	*Coins	
	*Currency	
	Checks	
	Total Cash (End of Day)	
	Add (+) Cash Paid Out	
	Total Cash Received	
	Less (-) Beginning Change Fund	
	Total Cash From Sales	
	Cash Proved	
	Cash Short	
Prepared By	Cash Over	

Total Cash According To Register Tape

*In a cash register report, coins and currency would be itemized separately.

You are a sales clerk at Snoopy Gift Shop. Your end of the day cash is in the following amounts: coins -- $250.35; currency -- $475.25; checks -- $49.50. The cash paid out was $20.00. Beginning Change Fund is $50.00. The Register Tape showed a total of $755.10.

Directions: Prepare a CASH REGISTER REPORT for register no. 3 for John Smith on April 13, 19--.

INFORMATION SHEET 3

TAKING INVENTORY

In keeping inventory by physically counting the pieces of various stock items on hand, the clerk will record necessary information on a form called an Inventory Sheet (this is shown in the problems that follow).

1. In each of the following problems, record the Stock No., Item, Unit, and Unit Price in the proper columns.
2. Then record the number of each item that the stock person has counted.
3. Next, the value of each item must be figured. Do this by multiplying Quantity times Unit Price.

   Quantity X Unit Price = Total Value

4. For example, 30 (boxes of aspirin) x 90¢ = $27.00
5. Record total value in the last column of the Inventory Sheet.

The first line of the first problem is worked. If you have further questions, see your teacher.

WORKSHEET 5

TAKING INVENTORY

INVENTORY SHEET

Date Clerk Page

Stock No.	Item	Unit	Quantity	Unit Price	Total Value
1149	Aspirin	Package	30	#.90	#27.00

Stock No.	Item	Unit	Unit Price
1149	Aspirin	Each Package	$ .90
1150	Cough Syrup	Each Package	$1.50
1151	Cold Remedy	Each Package	$2.50
1152	Children's Aspirin	Each Package	$1.25

As the stock person counted the inventory, he found 30 boxes of aspirin, 11 bottles of cough syrup, 10 containers of cold remedy, and 40 boxes of children's aspirin.

Directions: Fill out the above Inventory Sheet according to the information given above.

WORKSHEET 6

TAKING INVENTORY

INVENTORY SHEET

Date Clerk Page

Stock No.	Item	Unit	Quantity	Unit Price	Total Value

Stock No.	Item	Unit	Unit Price
1120	Racquetball Racket	Each	$22.00
1121	Racquetball	Can	3.25
1200	Tennis Racket	Each	35.00
1201	Tennis Balls	Can	4.00

As the stock person counted the inventory, he found 5 racquetball rackets, 8 cans of racquetballs, 11 tennis rackets, and 6 cans of tennis balls.

Directions: Fill out the above Inventory Sheet according to the information given above.

INFORMATION SHEET 4

FILLING ORDERS

In preparing to ship merchandise ordered, a clerk refers to the Shipping Order to check the number of each item ordered. The clerk removes from the shelf the quantity ordered and records the number under the "Shipped" column. If there is a shortage of items ordered, the clerk can subtract the number available from the number ordered and get the number that needs to be back ordered (B.O.). This number should be recorded in the B.O. column. To repeat the procedure:

Number Ordered
Minus (-) Number Available
Number to be Back Ordered

In the first problem, this is demonstrated in the order of the spark plugs.

95 spark plugs ordered
- 50 spark plugs in stock
45 spark plugs to be back ordered

WORKSHEET 7

FILLING ORDERS

FROM: Brown's Manufacturing Co.
228 Ridge Rd.
Denver, CO 80203

SHIPPING ORDER

CUSTOMER'S ORDER NO.	OUR ORDER NO.	SHIPPED VIA	DATE
245	7982	Truck	6/24/8-

SOLD TO: John's Auto Parts
250 27th St.
Denver, CO 80206

SHIP TO: Same

Quantity Shipped	Quantity B.O.	Unit	Stock No.	Quantity Ordered	Description
		Each	9006	50	Shock Absorbers
		Each	9084	60	Gas Caps
		Each	9077	95	Spark Plugs
		Each	9065	10	Air Filters
		Each	8777	35	Gas Filters

As a clerk of Brown's Manufacturing Co., you receive the Shipping Order shown above. You are to take from the shelves of stock the items listed and record the number available. If there is a shortage, record this also. You find 50 shock absorbers, 60 gas caps, 50 spark plugs, 5 air filters, and 35 gas filters.

Directions: Fill out the above Shipping Order according to the information given above.

WORKSHEET 8

FILLING ORDERS

FROM: Brown's Manufacturing Co.
228 Ridge Rd.
Denver, CO 80203

SHIPPING ORDER

CUSTOMER'S ORDER NO.	OUR ORDER NO.	SHIPPED VIA	DATE
3001	7981	Truck	6/22/8-

SOLD TO: Whaler's Supply Co.
369 Mountain Avenue
Denver, CO 80206

SHIP TO: Same

Quantity Shipped	Quantity B.O.	Unit	Stock No.	Quantity Ordered	Description
		Each	9006	42	Shock Absorbers
		Each	9084	40	Gas Caps
		Each	9077	55	Spark Plugs
		Each	9065	40	Air Filters
		Each	8777	100	Gas Filters

As a clerk of Brown's Manufacturing Co., you receive the Shipping Order shown above. You are to take from the shelves of stock the items listed and record the number shipped under "Quantity Shipped." If there is a shortage, list how much under "Quantity B.O." You find 42 shock absorbers, 34 gas caps, 50 spark plugs, 40 air filters, and 100 gas filters.

Directions: Fill out the above Shipping Order according to the information given above.

INFORMATION SHEET 5

FIGURING SALE PRICE

To obtain the sale price for merchandise that is to be reduced in price for sale, follow the steps below.

1. To start, you should know:

   Price X Decimal Value of Reduction = Dollar Reduction in Price

   (Percent = Decimal)

2. Example:

   In applying our above information to the first problem:

   $32.00 x 25% =

   (25% = .25) ---- percent must be written as a decimal before multiplying

   $32.00 x .25 = $8.00

3. Then, to finish;

Price	$32.00
Minus (-) dollar reduction	- 8.00
Sale Price	$24.00

Please see the first example that is worked for you. If you still need assistance, see your teacher.

You should be ready to work the following problems.

WORKSHEET 9

FIGURING SALE PRICE

Directions: **Figure both reduction in price and sale price.**

Price	Percent in Reduction	Decimal Value	Reduction in Price	Sale Price
$32.00	25%	.25	$8.00	$24.00
$45.00	25%	.25		
$24.52	25%	.25		
$35.00	25%	.25		
$87.76	25%	.25		

WORKSHEET 10

FIGURING SALE PRICE

Directions: Figure both reduction in price and sale price.

Price	Percent in Reduction	Decimal Value	Reduction in Price	Sale Price
$146.72	25%	.25		
$157.00	25%	.25		
$104.60	25%	.25		
$ 98.00	25%	.25		
$139.00	25%	.25		

COOPERATIVE OCCUPATIONAL EDUCATION

MODULE TEST

MAKING CHANGE

Directions: Place a tally mark under each column heading of a coin or currency if it is to be used in the change.

Amount Of Purchase	Amount Given To Clerk	Use The Fewest Number of Coins and Currency To Make Change							
		Pennies	Nickels	Dimes	Quarters	Half Dollars	$1	$5	$10

MODULE TEST

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Amount Of Purchase	Amount Given To Clerk	Use The Fewest Number of Coins and Currency To Make Change							
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MODULE TEST

CASH REGISTER REPORT

CASH REGISTER REPORT

Cashier_____ Reg. No._____ _____19____

Quantity	Denomination	Amount
	Coins	
	Currency	
	Checks	
	Total Cash (End of Day)	
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	Total Cash Received	
	Less (-) Beginning Change Fund	
	Total Cash From Sales	
	Cash Proved	
	Cash Short	
	Cash Over	

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Prepared By

Register Tape

MODULE TEST

TAKING INVENTORY

INVENTORY SHEET

Date Clerk Page

Stock No.	Item	Unit	Quantity	Unit Price	Total Value